

## **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (currently amended) ~~A method of extending an An-Open Shortest Path Found (OSPF) packet of an-OSPF~~ protocol used in a network having a plurality of nodes connected by optical links, the OSPF protocol having an OSPF packet comprising an opaque Link State Advertisement (LSA) having an LSA header and a LSA payload, the LSA including the method comprising:

~~an LSA header having~~ providing on the LSA header a single ~~Vendatt-Vendor attribute~~ Link State Identification (ID) field instead of the Opaque-Type and the Type-Specific ID fields of a standard LSA header; and

providing on the LSA payload a set of Vendor Attribute Type/Length/Value (TLV) fields, the Value field including an Enterprise Code field, including information identifying a vendor, and a ~~Vendatt-Vendor attribute~~ -Data section, and the Type field being a ~~Vendatt-Vendor attribute~~-Type field indicating the presence of the Enterprise Code field in the Value field;

the ~~Vendatt~~ Vendor attribute Link State ID field of the LSA header indicating the presence of the set of Vendor Attribute TLV fields.

2. (currently amended) ~~An-OSPF packet~~ The method as described in claim 1, wherein the ~~Vendatt-Vendor attribute~~ Link State ID field of the LSA header has a numerical value, which is designed not to conflict with the numerical values of ~~a the~~ Opaque Type and a the Type-Specific ID fields of a standard LSA header.

3. (currently amended) ~~An-OSPF packet~~ The method as described in claim 2, wherein the numerical value of the ~~Vendatt~~ Vendor attribute Link State ID field indicates the presence of Vendor specific link related information in the ~~Vendatt~~ Vendor attribute-Data section of the set of Vendor Attribute TLV fields.

4. (currently amended) ~~An-OSPF packet~~ The method as described in claim 2, wherein the numerical value of the ~~Vendatt~~ Vendor attribute Link State ID field indicates

the presence of Vendor specific node related information in the ~~Vendor~~ Vendor attribute-Data section of the set of Vendor Attribute TLV fields.

5. (currently amended) ~~An OSPF packet~~ The method as described in claim 3, wherein the Vendor specific link related information is a wavelength division multiplexing (WDM) link related information comprising one or more of the following:  
frequencies of dither tones ~~(a wavekey)~~ modulated onto a wavelength of the WDM link;  
a location field listing the physical shelf, card slot, and port location of the node terminating the WDM link;  
a wavelength identifier of the wavelength of the WDM link;  
a path name ~~trail name~~ assigned to the wavelength of the WDM link;  
a direction of the WDM link; and  
a working state of the wavelength of the WDM link.

6. (currently amended) ~~An OSPF packet~~ The method as s described in claim 5, wherein the ~~Vendor~~ Vendor attribute-Data section comprises a sub-TLV field, the sub-TLV field comprising a sub-sub set of Vendor Attribute TLV fields, which contains said Vendor specific link related information.

7. (currently amended) ~~An OSPF packet~~ The method as described in claim 4, wherein the Vendor specific node related information comprises one or more of the following:  
a Node Name which includes a text string bearing the name of the node; and  
a Software Version which includes a text string characterizing the current software load of the node.

8. (currently amended) ~~An OSPF packet~~ The method as described in claim 7, wherein the ~~Vendor~~ Vendor attribute-Data section comprises a sub-TLV field, the sub-TLV field comprising a sub-sub set of Vendor Attribute TLV fields, which contains said Vendor specific node related information.

9. (currently amended) ~~An OSPF packet~~ The method as described in claim 8, wherein the sub-TLV field comprises an Advertising Router ID field.

10. (currently amended) A method ~~protocol~~ for distributing vendor specific information for a WDM optical network, the method comprising: ~~based on the Open Shortest Path Found (OSPF) protocol, wherein the OSPF protocol is extended to provide~~

providing an OSPF packet, the OSPF packet comprising an opaque Link State Advertisement (LSA) having an LSA header and a LSA payload; LSA including:

~~an LSA header having~~ providing on the LSA header a single Vendor attribute Link State Identification (ID) field ~~instead of the Opaque Type and the Type-Specific ID fields of a standard LSA header; and~~

providing on the LSA payload a set of Vendor Attribute Type/Length/Value (TLV) fields, the Value field including an Enterprise Code field and a Vendor attribute-Data section, and the Type field being a Vendor attribute-Type field indicating the presence of the Enterprise Code field in the Value field; and

sending said OSPF packet to one or more nodes of the optical network;

the Vendor attribute Link State ID field of the LSA header indicating the presence of the set of Vendor Attribute TLV fields and wherein said Enterprise code field includes information identifying a vendor.

11. (currently amended) The method ~~A protocol~~ as described in claim 10, wherein the ~~Vendor attribute~~ Link State ID field of the LSA header has a numerical value, which is designed not to conflict with the numerical values of an ~~the~~ Opaque Type and a ~~the~~ Type-Specific ID fields of a standard LSA header.

12. (currently amended) The method ~~A protocol~~ as described in claim 11, wherein the numerical value of the ~~Vendor attribute~~ Link State ID field indicates the presence of Vendor specific link related information in the ~~Vendor attribute-Data section of the set of Vendor Attribute TLV fields.~~

13. (currently amended) The method ~~A-protocol~~ as described in claim 11, wherein the numerical value of the ~~Vendor attribute~~ Vendor attribute Link State ID field indicates the presence of Vendor specific node related information in the ~~Vendor attribute~~ Vendor attribute-Data section of the set of Vendor Attribute TLV fields.
14. (currently amended) The method ~~A-protocol~~ as described in claim 12, wherein the Vendor specific link related information is a wavelength division multiplexing (WDM link related information comprising one or more of the following:  
frequencies of dither tones (~~a-wavekey~~) modulated onto a wavelength of the WDM link;  
a location field listing the physical shelf, card slot, and port location of the node terminating the WDM link;  
a wavelength identifier of the wavelength of the WDM link;  
a path name ~~trail name~~ assigned to the wavelength of the WDM link;  
a direction of the WDM link; and  
a working state of the wavelength of the WDM link.
15. (currently amended) The method ~~A-protocol~~ as described in claim 14, wherein the ~~Vendor attribute~~ Vendor attribute-Data section comprises a sub-TLV field, the sub-TLV field comprising a sub-sub set of Vendor Attribute TLV fields, which contains said Vendor specific link related information.
16. (currently amended) The method ~~A-protocol~~ as described in claim 13, wherein the Vendor specific node related information comprises one or more of the following:  
a Node Name which includes a text string bearing the name of the node; and  
a Software Version which includes a text string characterizing the current software load of the node.
17. (currently amended) The method ~~A-protocol~~ as described in claim 16, wherein the ~~Vendor attribute~~ Vendor attribute-Data section comprises a sub-TLV field, the sub-TLV field comprising a sub-sub set of Vendor Attribute TLV fields, which contains said Vendor specific node related information.

18. (currently amended) The method ~~A protocol~~ as described in claim 17, wherein the sub-TLV field comprises an Advertising Router ID field.

19. (currently amended) A method for distributing wavelength identification information for a WDM optical network using a known routing protocol, the method comprising:

~~where the known routing protocol is extended to provide~~ providing a packet formatted according to the known routing protocol for transmitting vendor specific information related to wavelength identification; and ~~the packet comprising~~ inserting in said packet a ~~Vendor~~ Vendor attribute-type field, a ~~Vendor~~ Vendor attribute-length field, an Enterprise Code field, and a ~~Vendor~~ Vendor attribute-data section, wherein the ~~Vendor~~ Vendor attribute-Data section includes ~~the~~ a wavelength identification information to be distributed and wherein said Enterprise code field includes information identifying a vendor.

20. (currently amended) The method described in claim 19, wherein the known routing protocol is the OSPF protocol, and the packet includes a Link State Advertisement (LSA), comprising a set of Type/Length/Value (TLV) fields including said ~~Vendor~~ Vendor attribute-type, ~~Vendor~~ Vendor attribute-length, Enterprise Code fields, and the ~~Vendor~~ Vendor attribute-data section.

21. (currently amended) A WDM optical network, using a known routing protocol for distributing wavelength identification information for the WDM optical network ~~, the protocol being based on a known routing protocol, which is extended to provide a packet for transmitting vendor specific information related to wavelength identification,~~ the WDM network comprising:

a first network element for generating and transmitting a ~~the packet formatted according to said known routing protocol and~~ comprising a ~~Vendor~~ Vendor attribute-type field, a ~~Vendor~~ Vendor attribute-length field, an Enterprise Code field, and a ~~Vendor~~ Vendor attribute-data section, wherein the ~~Vendor~~ Vendor attribute-Data

section includes the wavelength identification information to be distributed; said Enterprise code field including information identifying a vendor; and  
a second network element for receiving said packet.

22. (currently amended) The network as described in claim 21, wherein the known routing protocol is OSPF, and the packet includes a Link State Advertisement (LSA), comprising a set of Type/Length/Value (TLV) fields, including said ~~Vendatt~~ Vendor attribute-type, ~~Vendatt~~ Vendor attribute-length, Enterprise Code fields, and the ~~Vendatt~~ Vendor attribute-data section.